

## **Transportation**

### Overview

Transportation facilities have a dramatic impact on the quality of life in a community as well as its ability to develop. The vast majority of Poquoson's roadways serves residential subdivisions and has low traffic volumes. Most of the City's major collector streets such as Wythe Creek Road, Poquoson Avenue, Little Florida Road and others have increasing traffic volumes, and because these roads were constructed decades ago, are substandard to handle present and future traffic loads. Many roadways include narrow travel lanes, have deep roadside drainage ditches, irregular intersections, and do not have adequate turn lanes. Alternative modes of transportation such as transit, bikeways and sidewalks are lacking in Poquoson. The 1996 transportation study developed by the Hampton Roads Planning District Commission for the City of Poquoson includes a number of strategies for improving the transportation network. Several roadway-widening projects will be needed in Poquoson over the next 15 years. While the accidents, traffic volume increases, and substandard roadway design characteristics certainly justify the need for roadway widening, the upgrades will be difficult considering the limited right-of-way and the close proximity of housing along the existing roadways. New roadways will need to be developed in the Big Woods to accommodate future economic development opportunities.

### Transportation and Its Impact on the Community

Transportation should be viewed as a vast collection of facilities and machines, which enhance human mobility. While roads and highways continue to be the largest single component of the transportation system, transportation planning also encompasses, and therefore must coordinate several different modes of transportation including air, bus, rail, water, transit, bicycle and the automobile. Road crossings, which are particularly prevalent in Poquoson, often create constraints in the transportation network and define the capacity of the road system. In the future, these points and places where transportation modes meet may become the most important aspect of transportation planning.

Transportation facilities shape and mold a community and have a dramatic impact on a city. Roads and intersections not only use a great deal of land, but they also attract development. New roads can channel business away from old routes affecting existing businesses. Major roadways can form physical barriers to development and tend to separate communities as well as create traffic choke points where they intersect. Transportation also impacts the environment. Automobiles are a major source of air pollution in the region. The large impervious surfaces dedicated to roadways affect water quality through pollutant laden run-off having velocities which can cause erosion. The noise caused by automobiles and trucks on major collector streets also has an impact on surrounding neighborhoods. Transportation also affects Poquoson's economic base. Access and visibility are two of the most critical factors in commercial and industrial location choices. Employees, customers, raw materials, equipment, supplies, and



merchandise must all be able to easily, economically, and safely reach the location while finished goods must be exported at a reasonable cost. An inadequate or overburdened transportation system will deter economic development.

#### Future Trends Affecting Transportation

There are a number of factors that will impact transportation networks and systems throughout the United States. Many of these factors will also impact the City of Poquoson. The following trends were considered in developing this plan:

- New technology will improve the fuel efficiency and reduce the exhaust pollution of airplanes, automobiles, buses and trucks.
- Vehicles powered by alternative fuels will not attain the travel ranges of today's automobiles during the 20-year planning period.
- Communication advancements combined with higher travel costs will continue to reduce business travel.
- Federal and state funding for transportation system improvements will likely diminish.
- Current Roadway Network and Street Conditions

**Network** – The City of Poquoson has over 50 miles of publicly maintained roads in its thoroughfare system. Access between the City of Poquoson and the surrounding region is directly provided by either Wythe Creek Road to the south with the City of Hampton or by Victory Boulevard to the west with York County. Yorktown Road also provides access with York County to the west. Vehicular access between the eastern, central and western sections of the City is provided by a series of urban collectors which include: Little Florida Road, Poquoson Avenue, Messick Road, Wythe Creek Road, Hunts Neck Road and Yorktown Road. From these roads local access to individual's homes or businesses is provided by a series of local access roads that span outward in a fan pattern down the many necks of land located in the City.

**Maintenance** - Most roads in Poquoson have been accepted by the City for public maintenance. The Virginia Department of Transportation for state maintenance funds has also approved a number of City - maintained streets. Furthermore, the Commonwealth as being eligible for federal highway funding has identified all of the Urban Minor Arterial and Urban Construction roads within the City. Roads that have been accepted for City maintenance, but are not eligible for state funds include Bennett Road, Freeman Drive and Magnolia Lane.

**Private Streets** - Some streets in the City are private and are not maintained by the City or State, but by the private property owners who use them.



**Right-of-Way Widths** - A number of the older streets within the City have deficient right-of-way widths, some of which are less than the 50-foot standard currently required by the Virginia Department of Transportation. The lack of right-of-way makes it more difficult and expensive to correct deficiencies.

**Drainage and Road Elevations** - Since the elevation of land in Poquoson varies from 0 to 10 feet above mean sea level; many of Poquoson's roadways are at risk for tidal flooding during a major storm. Those streets with elevations below 4.5 feet mean sea level are at particular risk, resulting in flooding from tide waters approximately every one or two years. For this reason, Poquoson's Subdivision Ordinance establishes a minimum elevation of 4.5 feet Mean Sea Level for all new streets. The most heavily traveled roads within Poquoson, Wythe Creek Road, Victory Boulevard, Little Florida Road, and Poquoson Avenue are among the highest in elevation and, therefore, have the least risk of flooding. The heavily traveled section of Wythe Creek Road in Hampton, just south of the Poquoson corporate limits, however, is subject to periodic flooding.

**Sidewalks and Bike Paths** - The few sidewalks in the city are located primarily along the business section of Wythe Creek Road and along Poquoson Avenue from Forrest Road to Church Road.

#### Programmed Transportation Improvements

The *Hampton Roads Virginia Transportation Improvement Program* for FY 96-99 lists the following projects currently programmed for construction using State and Surface Transportation Program Regional allocation funds, respectively:

- Widen Wythe Creek Road to five lanes from Hudgins Road to Wainwright Drive and three lanes from Wainwright Drive to Brown's Neck Road.
- Widen Wythe Creek Road to five lanes from Alphas Street to southern city limits.

#### Planned Transportation Improvements

The City of Poquoson's *1992 Comprehensive Plan* provides the following roadway improvements:

Major intersection improvements at several locations along Wythe Creek Road, Little Florida Road, and Poquoson Avenue.

Widen Wythe Creek Road.

Widen Victory Boulevard to 4 lanes as development activities have begun in the Big Woods area of Poquoson.



Improve Little Florida Road, Poquoson Avenue, Yorktown Road, and Cary's Chapel Road.

The *Hampton Roads 2015 Regional Transportation Plan* indicates the following recommendations for Poquoson:

Widen Victory Boulevard to four lanes from the York County line to Wythe Creek Road.

Widen the Little Florida Road right-of-way from Wythe Creek Road to Poquoson Avenue providing for two upgraded travel lanes and turning lanes at the primary intersections.

Improve Yorktown Road, (turn lanes and shoulder widening), from Wythe Creek Road to York County line.

### Highway Classification

The configuration of Poquoson's thoroughfare system is based upon the premise that each road or street is a part of a larger transportation system. As such, each road or street is classified based upon the specific role it plays in the movement of vehicles throughout the system. These classifications can then be used to govern the design criteria for each road as well as the amount of maintenance funds that may be required. These classifications are as follows:

**Principal Arterial:** These highways are the most significant roads in the urban area that serve the major centers of activity, constitute the highest traffic volume corridors, serve the longest trips, carry the major portion of through traffic in the urban area and provide continuity between rural arterials. There are no principal arterial roads in Poquoson.

**Minor Arterial:** These highways interconnect and supplement the principal arterial system with a greater emphasis on land access and a lower level of traffic mobility. They provide intra-community services as well as connecting rural collectors to the urban highway system. Examples of minor arterial roads include Victory Boulevard, Little Florida Road, and sections of Wythe Creek Road and Poquoson Avenue.

**Urban Collector:** These highways provide land access service and traffic circulation within residential, commercial, and industrial areas. They collect local traffic and distribute it to the arterial system. Examples of urban collector roads include Messick Road, Yorktown Road, Hunts Neck Road, and sections of Wythe Creek Road and Poquoson Avenue.

**Local Access:** These streets provide direct access to adjacent land and provide access to the higher systems. Service to through traffic is discouraged. Examples of local access roads include Rens Road, Pasture Road and Emmaus Road, as well as those public roads serving residential subdivisions.



Level of Service:

Much of roadway transportation planning is aimed at maintaining an "adequate level of service". This transportation related jargon simply means keeping the traffic on streets moving freely, efficiently and safely. Roadways and intersections are given a level of service (LOS) grade based on its traffic characteristics. You could almost consider these as roadway report card grades. Outlined below are the Level of Service definitions:

**Chart 1 - Level of Service Definitions**

<b>LOS</b>	<b>ROADWAY SEGMENT</b>	<b>INTERSECTIONS</b>
<b>A</b>	Free flow, low traffic density.	No vehicle waits longer than one signal indication.
<b>B</b>	Delay is not unreasonable, stable traffic flow.	On a rare occasion, motorists wait through more than one signal indication.
<b>C</b>	Stable conditions, movements somewhat restricted due to higher volumes, but not objectionable for motorists.	Intermittently, drivers wait through more than one signal indication and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable.
<b>D</b>	Movements more restricted queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups.	Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive back-ups.
<b>E</b>	Actual capacity of the roadway involves delay to all motorists due to congestion.	Very long queues may create lengthy delays, especially for left turning vehicles.
<b>F</b>	Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases.	Back-ups from locations downstream restrict or prevent movement of vehicles out of approach, creating a storage area during part of all of an hour.

The accepted measure for determining to what extent major roadway improvements are, or will become, necessary is the ratio between traffic volume and roadway capacity. When traffic volumes exceed 100% of roadway capacity, there are unacceptable travel delays along the roadway and often side streets as well. These delays increase air pollution, waste energy, and cause driver frustration, which often manifests itself in attempts to find short cuts, usually along roads which are inappropriate for through traffic. In any case, congestion has negative impacts on overall roadway network safety.



Taken together, safety deficiencies and capacity deficiencies are strong indicators of the need to provide road improvements. The type and extent of improvement required varies from case-to-case and must be analyzed. Improvement can be classified in four basic types:

New Facilities  
New Through Lanes

Spot Improvements  
Transportation Demand Management (TDM)

New facilities remove traffic from existing roadways; new lanes add capacity and enhance safety; spot improvements include turn lanes, improved roadway geometrics, signals, pavement dividers or markings, and other physical improvements short of adding through lanes; while the TDM (outlined in more detail below), measures usually focus on peak hour demand reductions by encouraging alternative travel modes or "off-peak" travel times.

#### Poquoson Level of Service and Transportation Improvement Study

In 1996 the City of Poquoson requested that the Hampton Roads Planning District Commission (HRPDC) staff evaluate the present and future (2015) levels of service (LOS) on the major arterial and collector streets in the City. This study includes an analysis of all major intersections along these roadways and provides recommendations on needed roadway widening, bikeways, and intersection improvements, including signalization. Many of the recommendations in this Comprehensive Plan are derived from the findings of this study.

The level of service (LOS) study focused on the following roadways:

<i>Wythe Creek Road</i>	<i>Victory Boulevard</i>	<i>Little Florida Road</i>	<i>Messick Road</i>
<i>Poquoson Avenue</i>	<i>Yorktown Road</i>	<i>Brown's Neck Road</i>	<i>Hunt's Neck Road</i>
<i>Ridge Road</i>	<i>Cary's Chapel Road</i>		

According to 1994 traffic counts, the subject facilities carried traffic volumes ranging from a low of 353 vehicles per day (VPD) on Poquoson Avenue near West Cemetery Lane to a high of 15,316 VPD on Wythe Creek Road just north of Alphas Street. Historical traffic counts reveal that volumes on some roadways have increased annually by as much as 5.5 percent over the past eight years.

**Study Objectives** - The purpose of the study was to determine the existing (1994) level of service (LOS) on selected arterial and collector streets, forecast future (2015) traffic volumes, determine year 2015 LOS for the same arterials, and provide recommendations to improve traffic flow and safety on these facilities. The specific objectives of the study were to:

- Collect specific existing roadway and traffic characteristics data to be used in the analysis.



- Evaluate traffic conditions and determine the levels of service (LOS) of signalized and unsignalized intersections within the study area during the AM and PM peak hours.
- Analyze accident data along selected arterials and collectors.
- Determine existing and future arterial levels of service for the selected roadways.
- Determine the most feasible types of bicycle paths along the study area roadways.
- Determine the impact of any programmed, planned, or recommended improvements on the roadway network within the study area.

**Expected Population Growth and Its Impact on Transportation** - In 1990, Poquoson had a population of 11,005, a total employment of 1,593, and 3,890 dwelling units. According to the *Hampton Roads 2015 Regional Transportation Plan*, the City's population, total employment, and dwelling units are predicted to reach 15,225, 1,877, and 6,397, respectively. These projections translate into increases of 38% in population, 18% in total employment, and 64% in dwelling units between 1990 and 2015.

**Study Area Street System** - The primary street network in Poquoson consists of six east-west and four north-south routes. The main east-west route is Victory Boulevard/Little Florida Road, from the York County line to Poquoson Avenue. Others include Poquoson Avenue, from Wythe Creek Road to Amory's Wharf; Ridge Road, from Poquoson Avenue to Messick Road; Messick Road, from Poquoson Avenue to Messick Point; and a small portion of Cary's Chapel Road, from the York County line to Wythe Creek Road. The major north-south arterial is Wythe Creek Road, from Hampton City line to Yorktown Road. Other north-south facilities include Yorktown Road, from the York County line to Wythe Creek Road; Hunt's Neck Road, from Yorktown Road to Edward's Road; and Brown's Neck Road, from Hunt's Neck Road to Breezy Point.

Wythe Creek Road is the only multi-lane roadway within the study area. This segment contains four lanes with a continuous center left turn lane from just south of Alphas Street to Hudgins Road. With the exception of Victory Boulevard, the other roadways are two-lane facilities with narrow lanes (10-11 foot lanes) and little to no shoulders (0-3 feet).

**Traffic Control** - A total of eight intersections were analyzed as part of the level of service (LOS) study. Currently, there is only one signalized intersection within the City. This traffic signal is located at the intersection of Wythe Creek Road and Victory Boulevard/Little Florida Road. The remaining intersections are unsignalized.

#### TRAFFIC VOLUMES AND TRENDS

Average daily traffic (ADT) volume counts for many roadways in Poquoson are collected on a semi-annual basis by the Virginia Department of Transportation. The data from the twenty-four traffic count locations in Poquoson are used to study and analyze traffic flow patterns in the city.



To supplement this, the city has recently implemented its own traffic count system to provide annual updated counts.

To examine historical growth of traffic on the roadways within the study area, average daily trips (ADT) were examined for all of the 24 count locations. Average daily traffic counts have been collected at eight stations since 1986 during the same season each year. Of the remaining count locations, only twelve stations had counts since 1992. The remaining four stations only had data from 1994.

The attached table lists the historical average daily trips (ADT) data and average annual growth rates for the years 1986-1994 and for the years 1990 to 1994 to represent long-term and short-term traffic growth. The table depicts the average daily trips (ADT) and average annual growth rates for eight locations with historical data from 1986 to 1994. Average annual growth rates were determined by averaging the annual growth rates for the four two-year periods between 1986 and 1994.

As shown in Table 1 and Figure 1, the majority of the roadways have experienced an increase in traffic during the period 1986 to 1994. The highest average annual growth rate of the eight historical stations was found on Victory Boulevard (5.5 percent), followed by Messick Road (4.2 percent), and Yorktown Road (4.1 percent). In addition, the table lists average annual growth rates for 1990 to 1994. These annual growth rates reveal which facilities have experienced the latest increases in traffic volumes. Of these, Cary's Chapel Road has experienced the highest growth (12.0 percent).

#### Accident Analysis

**Intersections** - An accident analysis was performed as part of the 1996 level of service study to determine high accident locations within the city. The Poquoson Police Department provided accident data for the years 1990 through 1994.

The worst accident location in the City occurred at the signalized intersection of Wythe Creek Road, Victory Boulevard and Little Florida Road. The majority of the accidents at this location were rear end and angle collisions, due largely to error in driver judgment. More than 90 percent of the accidents at this intersection involve left turning vehicles (from all directions). It is therefore essential to protect all left-turn movements with exclusive left-turn phases. Two additional intersections along Wythe Creek Road - at Hudgins Road and at Poquoson Avenue, were ranked four and five. At the Hudgins Road intersection, the accidents were basically all westbound left-turning vehicles being hit on the left side leaving Hudgins Road onto southbound Wythe Creek Road. Poor sight distance or speeding may be attributed to the problem. The intersection geometrics at the intersection of Poquoson Avenue contributes to its fifth place ranking. The heaviest flow of traffic at this intersection does not have the right of way, leading to an excessive number of turning movements.





The second, third and fifth rankings are intersections along Little Florida Road. The Cedar Road intersection has limited sight distance, leading to vehicles pulling out and turning in front of traffic. Several rear end collisions have occurred at this intersection, possibly due to the lack of a left turn storage lane for turning vehicles. The Poquoson Avenue intersection also has poor sight distance and a lack of turn bays for turning vehicles. Lastly, the Odd Road intersection is misarranged and does not form a typical cross intersection, leading to driver confusion. Practically all of the accidents at this intersection were rear end collisions, most likely; a result of no left turn bays.

**Corridor Accident Summaries** - Of all the roadways in Poquoson, Wythe Creek Road had the highest number of accidents (173) over the five-year period, followed by Poquoson Avenue (155) and Little Florida Road (107). The most common accident type along these roadways was "ran off the road". Several "angle" and "rear end" collisions occurred mainly at intersections where sight distance is poor and/or no left turn storage lanes are present at the intersection. The high number of angle accidents along Wythe Creek Road is due to its signalized intersection with Victory Boulevard/Little Florida Road. The leading cause of accidents along Poquoson Avenue was "ran off road". These accidents are due to narrow lanes and a lack of adequate shoulders. This is the case with many of the other two-lane roads in the city. Lastly, rear end collisions were the most dominant type of accident along Little Florida Road, where sight distance and lack of shoulders are significant problems.

#### Roadway Level of Service Analysis (LOS)

A level of service analysis was performed using the methods described in the 1994 *Highway Capacity Manual*. The roadway level of service is based on a roadway's average daily traffic (ADT) volume, lane and shoulder widths, passing zones, turn bays and medians, and driver type.

The level of service (LOS) analyses indicate that several roadways are presently operating at a level of service (LOS) of D or worse during the peak periods. In fact, several of the roadways are operating at a level of service (LOS) of E, resulting in delays for motorists during the peak travel periods. Wythe Creek Road, Little Florida Road, Poquoson Avenue, and Yorktown Road each have segments that are operating at a level of service (LOS) of E during the morning and afternoon peak hours. Level of service (LOS) of E describes roadways, which are approaching failing operations. Traffic moves slower and therefore has a better chance for accidents along these roads that are congested. These poor levels of service can be attributed to several factors such as narrow lanes, little to no shoulder width, high traffic volumes particularly during peak hours, and low percentages of passing zones. The level of service (LOS) of E on Wythe Creek Road between Little Florida Road/Victory Boulevard and Hudgins Road is due to the delay encountered at the Little Florida Road signal and the reduction from four lanes to two lanes north of the Hudgins Road intersection.

Unless effective improvements are implemented in a timely manner, the level of service (LOS) of the roadways will continue to degrade as the City continues to grow. Fortunately, each of the



arterials with a level of service (LOS) of D or worse listed above are either programmed or planned to be improved.

**Intersection Level of Service Analysis** - The intersection level of service (LOS) analysis was performed using turning movement counts and signal timing plans.

According to the analysis, the following movements exhibit poor levels of service (LOS):

- Northbound left at the Wythe Creek Road/Victory Boulevard-Little Florida Road intersection in the AM peak hour - (LOS) of E.
- Westbound left at the Hudgins Road/Wythe Creek Road intersection in the PM peak hour- (LOS) of E.
- Westbound left out of the development at the Cary's Chapel Road intersection in the AM peak hour- (LOS) of F.
- Eastbound through/Left at the Cary's Chapel Road / Wythe Creek Road intersection in the PM peak hour- (LOS) of F.
- Westbound through/Right out of the development at the Cary's Chapel Road intersection in the PM peak hour - (LOS) of F.

Also, any movement that resulted in an (LOS) of D needs to be monitored closely. Further analyses would determine if additional improvements were necessary in the future.

**Signal Warrant Analysis** - A signal warrant analysis (SWA) was performed for two intersections:

Hudgins Road/Wythe Creek Road Intersection  
Cary's Chapel Road/Wythe Creek Road Intersection

These intersections had unacceptable levels of service on the side streets with high turning volumes during the peak hours. Signal warrants were taken from the 1988 edition of the *Manual on Uniform Traffic Control Devices (MUTCD)*. The MUTCD states the following guidelines when checking signal warrants at an intersection,

"Traffic control signals should not be installed unless one or more of the signal warrants in this Manual are met. The satisfaction of a warrant or warrants is not itself justification for a signal. Information should be obtained by means of engineering studies and compared with the requirements set forth in the warrants. The engineering study should indicate the installation of a traffic signal would improve the overall safety and/or operation of the intersection. If these requirements are not met, a traffic signal should neither be put into operation nor continued in operation (if already installed)."



For the two intersections under investigation, four of the eleven warrants were tested at both intersections. These four warrants are the most commonly used signal warrants. They are as follows:

- *Warrant 1 - Minimum Vehicular Volume* - Used when the volume of intersecting traffic is the principal reason for consideration of signal installation.
- *Warrant 2 - Interruption of Continuous Traffic* - Used when the traffic volume on a major street suffers excessive delay or hazard in entering or crossing the major street.
- *Warrant 9 - Four Hour Volumes* - Used when each of any four hours of an average day the plotted points representing the vehicles per hour on the major street and the corresponding vehicles per day on the higher volume minor street approach all fall above the curve for the existing combination of approach lanes.
- *Warrant 11 - Peak Hour Volume* - Used when traffic conditions are such that for one hour of the day minor street traffic suffers undue delay in entering or crossing the major street.

**Hudgins Road/Wythe Creek Road Intersection** - This intersection did not satisfy any of the four warrants listed previously. In the future, this intersection may require signalization as traffic volumes increase along Wythe Creek Road and if accident frequency increases at this location. If a signal is installed at this location in the future, it is essential that the new signal be timed with the signal at Wythe Creek Road/Victory Boulevard-Little Florida Road.

**Cary's Chapel Road/Wythe Creek Road Intersection** - This intersection passed all four warrants tested for signalization. The lack of space on the southern (City of Hampton) side of the intersection presents a problem with signalizing this intersection. The Poquoson portion of Wythe Creek Road is currently programmed in the TIP to be widened to five lanes. For this signal to be effective, the southern portion of the intersection would need to be widened far enough south across the Kiln Creek Bridge, approximately 500-750 feet, to provide storage space for northbound traffic, especially the northbound left-turns and to provide merge space for southbound traffic if the merge takes place beyond the intersection. Currently, northbound traffic at this intersection backs up far into the City of Hampton, because there is only enough storage space for two cars making northbound left-turn movements. The 527 northbound left-turns onto Cary's Chapel Road in the afternoon peak hour are enough to warrant dual left-turn lanes if the intersection was to be signalized. A general rule of thumb for left-turn storage lanes is one foot per vehicle/hour of storage during the peak hour, which would equate out to approximately 500 feet of storage space plus a 150-foot taper on the City of Hampton side of the intersection. If dual left-turn lanes were constructed, approximately 250 feet of storage plus 150 feet of taper for each turn lane would be required. It would then be necessary to widen the westbound lane of Cary's Chapel Road to two lanes to receive the dual left-turn lanes.



Another possible solution to improve the northbound problem at this intersection would be to prohibit northbound left turns entirely or only to local traffic during the afternoon peak period, 3:00 - 6:00 p.m. This presents another problem with the diverted traffic, since these left-turn vehicles would have to proceed north to the Victory Boulevard/Little Florida Road intersection to turn left. At this intersection, the mast arm holding the signal head is not strong enough to support the load of a signal head with the provisions of protected left-turn phasing.

**Left-Turn Warrant Analysis** - As indicated in the accident analysis, rear end collisions was one of the main types of accidents along the roadways in Poquoson. Rear end collisions occur along Little Florida Road because of its limited sight distance and lack of left-turn lanes at high volume intersections. Therefore, a left-turn lane warrant analysis was performed on four of the subject intersections: Little Florida Road/Odd Road, Little Florida Road/Cedar Road, Little Florida Road/Poquoson Avenue, and Yorktown Road/Emmaus Road. The guide used for this analysis was VDOT's *Minimum Standards of Entrances to State Highways*.

The left-turn analysis indicated that the Odd Road intersection was the only intersection that warranted an eastbound left-turn lane on Little Florida Road during the morning and afternoon peak hours. The Poquoson Avenue intersection warranted an eastbound left-turn lane on Little Florida Road in the afternoon peak hour. The intersections of Little Florida Road/Cedar Road and Yorktown Road/Emmaus Road do not currently warrant a left-turn lane according to this analysis.

#### Future Roadway Conditions

**Year 2015 Travel Demand Analysis** - Traffic volumes and patterns resulting from future land use conditions were projected by utilizing the *MINUTP* transportation demand model. The data inputs for the model include the Peninsula network of highways and streets, socioeconomic data for each jurisdiction on a transportation analysis zone level, origin-destination data, and friction factors

The MINUTP model was used to project study area traffic volumes for the year 2015. The projected 2015 socioeconomic data, developed by HRPDC staff in conjunction with the local jurisdictions, was used as input to the model. The 2015 base highway network includes all of the planned transportation projects included in the approved *Hampton Roads 2015 Regional Transportation Plan*. Major improvements include the widening of Victory Boulevard, from York County line to Wythe Creek Road; Little Florida Road, from Wythe Creek Road to Poquoson Avenue; and Wythe Creek Road, from Hampton City Line to Wainwright Drive.



**Future Traffic Volume Projections** - Traffic volumes are projected to increase for all of the roadways within Poquoson as shown in Table 2. Several arterials and collectors are projected to experience annual increases in traffic volumes by up to three percent by the year 2015. A few of the smaller arterials and collectors are not included in the MINUTP model. For these roadways, an average growth factor was calculated from facilities in the vicinity of the roadway and was then applied to obtain a 2015 projection.

**Future Roadway Level of Service Analysis** - The year 2015 arterial level of service (LOS) analysis was performed using the same methods as described in the existing analysis portion of this study. The 2015 analysis was based on afternoon peak hour conditions. First, a level of service (LOS) analysis was performed for all the facilities without any programmed and planned improvements to show the need for improvement. Next, a level of service (LOS) analysis was performed including any programmed improvements in the current TIP, any planned improvements in the 2015 Regional Transportation Improvement Plan, and improvements needed to bring the roadways up to Virginia Department of Transportation roadway construction standards. These standards recommend roadway and shoulder widths required for two-lane arterials with certain ranges of average daily traffic (ADT). These improvements have not been planned or programmed, but will improve the safety of the facilities, improve the levels of service, and provide a wide enough shoulder for pedestrians and bicyclists.

The programmed improvements for Wythe Creek Road will greatly improve the level of service (LOS) along this facility with the exception of the segment from Wainwright Drive to Poquoson Avenue. The segment is scheduled to be widened to three lanes (two lanes with a continuous center left-turn lane). With the addition of a center turn-lane, the saturation flow increases by approximately five percent, but eliminates the opportunity for passing, therefore the future level of service remains at (LOS) of E. This same situation applies to the section of Yorktown Road between Hunt's Neck Road and Poquoson Avenue, also projected to operate at a level of service (LOS) of E.

#### Commuting

Poquoson, like most jurisdictions in Hampton Roads, has relied heavily on roadways and automobiles to serve its growing transportation needs. This has contributed to the region's heavy dependence on single occupant vehicles. Table 4 below summarizes the characteristics of commuting in Poquoson as well as other cities/counties in Hampton Roads, based on the 1980 and 1990 Census data. According to the 1990 Census, during the journey to work in Poquoson, 82 percent drive alone, twelve percent carpool, less than one percent use bicycle, and approximately five percent use other means of transportation. As shown in the table below, the rate of ridesharing in Poquoson has dropped from 25.8% in 1980 to 12.4% in 1990. This decline in ridesharing has obviously increased the rate of solo drivers from 67.9% in 1980 to 82.2% in 1990. The same trend has been observed in other jurisdictions in Hampton Roads as well as other metropolitan areas throughout the country.



### Transportation Demand Management (TDM)

**Background** - Transportation Demand Management (TDM) can be defined as a group of measures and strategies designed to maximize the people moving capability of the transportation system by increasing the number of persons in a vehicle, or by influencing the time or need of travel. The Tidewater Regional Transit (TRT) Authority has been working on TDM initiatives for a number of years. The Peninsula Transit (Pentran) Authority and TRT are currently developing a regional TDM program for Hampton Roads. This program will work extensively with area employers to identify and institute methods to reduce single occupant vehicle demand. To date, the TDM Committee has produced three elements of this program: Mission Statement, Strategic Plan, and Action Plan. These elements along with existing and potential TDM strategies are incorporated in the Congestion Management System Plan for Hampton Roads.

### **Potential TDM Programs for Poquoson**

*Regional Rideshare Program:* This program currently provides free matching service for commuters living in South Hampton Roads, the Peninsula, Isle of Wight, Eastern Shore, and the Northern Counties in North Carolina. Commuters living in Poquoson have therefore access to this regional rideshare-matching program.

*Guaranteed Ride Program:* This program provides a backup ride in case of emergency for commuters who share a ride to work. It was first implemented in September 1992 for the Southside commuters. On October 1, 1995, the program was extended to include the Peninsula region.

*Commuter Check Program:* This program provides a simple way for employers to give employees a valuable tax-free benefit. Section 132 of the Federal tax code allows employers to give each employee up to \$60 a month for transit and vanpool-commuting costs as a tax-free benefit. Commuter checks are used to buy tickets and fare cards from participating transit service providers in the region.

*Park-and-Ride Lot:* There are currently 29 park-and-ride lots throughout the Hampton Roads area. Those lots are located in the Cities of Chesapeake, Newport News, Portsmouth, Suffolk, and Virginia Beach; and the Counties of Gloucester, Isle of Wight, James City, Surry, and York. Presently, there is no designated park-and-ride lot for commuters in Poquoson. Lots in the vicinity of retail areas and major roadways are convenient for commuters desiring to carpool and/or vanpool to work. A good location in Poquoson would be at the intersection of Wythe Creek Road and Little Florida Road. This could be arranged in one of the parking lots serving retail and commercial activities around that intersection.

*Van Leasing Program:* TRT is currently offering the service to interested individuals or organizations. A lease agreement is signed by the TDM program manager and the vanpool driver. This agreement is for one year. The van driver rides free and the riders are charged a fee based on their round trip commute distance.



### Public Transportation

Poquoson is not currently served by any form of public transportation. However, according to Pentran's long-term plan, a new Route 26 is proposed to extend fixed route services to Poquoson from the proposed Patrick Henry Mall Transit Center via Victory Boulevard, Little Florida Road, Wythe Creek Road, Hudgins Road, and Poquoson Avenue. This route would provide services on weekdays from 5:30 am until midnight, Saturdays from 6:30 am until midnight and Sundays from 8:00 am until midnight. The route is recommended to operate at 30-minute headways during the peak, at a minimum. This future expansion of fixed route services is also included in the Regional 2015 Transit Element Plan for Hampton Roads. Furthermore, the 2015 Transit Plan indicates paratransit services for areas not planned to be served by fixed route transit.

### Bikeways/Sidewalks

The use of bicycles in Poquoson could be an important component of the total transportation system. The recent increase in bicycle travel in the United States is due, in part, to a recognition of its many potential benefits. These benefits include energy conservation, reduced noise and air pollution, traffic reduction, health and fitness improvement, as well as other personal and economic incentives. Increasingly, bicycle use has become a viable means of transportation in addition to being a recreational activity. The University of Virginia Center for Public Service estimates that ten- percent of Virginia's population uses bicycles to commute to work or school, at least on an occasional basis. Poquoson, due to its mild weather, and flat terrain offers ideal opportunities for bicycling.

Because the City is primarily residential, there is a need to develop a system of bikeways and sidewalks to connect residential areas to retail, community centers, recreational areas, and schools. The 2015 Bicycle and Pedestrian Elements for Hampton Roads include a comprehensive network of bikeways along all arterials and collectors in Poquoson. This bikeway plan is visionary and, to date, no funding sources have been committed to the plan. It is therefore important that all roadway widening or new roadway projects other than subdivision streets include the construction of bikeways and sidewalks.

In general, bicycle riders are classified into three groups:

Group A: Advanced bicyclists and experienced riders who can operate under most traffic conditions and are current users of collectors and arterial streets.

Group B: Basic bicyclists which prefer comfortable access to destinations by a direct route either low speed, low traffic volume streets or designated bicycle facilities.

Group C: Children who are usually monitored by parents that prefer access to destinations surrounding residential areas including schools, recreation facilities, shopping and other residential areas; residential streets with low traffic volumes and



travel speeds; well-defined separation of bicycle and motor vehicles on arterial and collector streets, or on separate bike paths.

Numerous types of facilities are used to accommodate bicycle riders. These are as follows:

shared lanes	wide curb lanes or wide outside lanes
bicycle lane	paved shoulder
separate bicycle paths	sidewalks

Currently, there are few bikeways and sidewalks in the City. Table 3 includes an inventory of existing roadways that were selected for potential bikeways and sidewalks. All but two roads (with short segments) are narrow with almost no shoulders and deep roadside ditches. Victory Boulevard from the York County line to Wythe Creek Road has bike paths with shoulders on both sides. Wythe Creek Road from Alphas Street to Hudgins Road is currently four lanes with curb and gutters on both sides, an eight-foot bike path on one side, and a four-foot sidewalk on the other.

As a first step to design a system of bikeways/walkways, the following minor arterials and collectors were recommended for potential bikeways and walkways: Victory Boulevard, Wythe Creek Road, Little Florida Road, Poquoson Avenue, Yorktown Road, Messick Road, Hunts Neck Road, and Brown's Neck Road. These roads connect most residential areas to the public, retail, and commercial locations in Poquoson. An examination of the current road system in Poquoson revealed that shared lanes and improved shoulders could accommodate bicycle riders and pedestrian needs in the City. The following provides a brief description of these two types of bicycle facilities:

Shared lanes In residential areas with low motor vehicle traffic volumes and average motor vehicle speeds of less than 30 mph, this method should present no problem for Group A riders and will normally be adequate for Group B/C riders to use if the lane is at least 12 feet wide. Where the lane width is less than 12 feet, additional lane width or lower operating speed may be required.

Improved/Paved Shoulders AASHTO and many states explicitly recognize that adding or improving paved shoulders is often the best way to accommodate bicyclists, especially in rural areas. While some states prohibit bicycle riding on the shoulders, *Virginia does not Prohibit Bicycle Riding On Shoulders*. Paved shoulders should be a minimum of four feet wide when designed to accommodate bicycle travel. When vehicle speeds exceed 40 mph and annual average daily traffic (AADT) is 2,000 or more, shoulder widths should be increased to six feet. Where shoulders are designated as bike facilities, it is essential to keep them clean, free of debris, and well maintained.

From HRPDC's analysis, improving shoulders along existing roadways is a first step to achieve a system of bikeways and walkways in Poquoson. Improved shoulders could accommodate





bicycle riders and pedestrians. In addition, they could provide many safety features and benefits. Their more important advantages are as follows:

- Space is provided for emergency stopping and maintenance operations.
- Highway capacity is improved.
- Sight distance is improved and thus improving safety.
- Lateral clearance is provided for signs and street trees.
- Space is provided to escape potential accidents or reduce their severity.
- Space is provided for pedestrian and bicycle use.

### **Crosswalks**

A crosswalk needs analysis was not performed as part of this Plan because pedestrian volume counts were not available. Further consideration should be given to the creation of formal crosswalks at several points in Poquoson. AASHTO provides guidelines for crosswalk installation at uncontrolled intersection legs, midblock crossings, and signalized intersections without pedestrian heads. The warrants are based upon pedestrian and vehicle peak hour volumes. For crosswalk installation, proper sight distances are required and obstructions need to be removed. For example, parked cars need to be located at least 20 feet away from the crosswalk. In addition, mid-block crossings should not be placed within 400 feet of an adjacent intersection. Proper signage and marking of crosswalks is also an important component.

As noted above, four-hour pedestrian volume counts were not available at the time of this plan development. However, pedestrian activity at several intersections should be of concern as traffic volumes continue to increase along City streets. The presence of retail areas and schools leads to an increase of pedestrian activity at surrounding intersections. The following intersections, located near potential pedestrian activity centers, should be monitored to determine any safety concerns with crossing pedestrians and bicyclists:

- Wythe Creek Road/Victory Boulevard-Little Florida Road
- Wythe Creek Road/Hudgins Road
- Little Florida Road/Odd Road

Further analyses may need to be conducted at these intersections to determine the justification of crosswalks and if a safety hazard exists.



**Hampton Roads Planning District Commission (HRPDC) Study Recommendations**

Outlined below is a summary of the recommendations included in the 1996 Hampton Roads Planning District Commission (HRPDC) Level of Service Study:

- At some intersections along Little Florida Road, simply trimming trees and shrubs may improve the sight distance, for the others re-aligning Little Florida Road is the only solution.
- The signal-warrant analysis determined the need for a signal at the Wythe Creek Road and Cary's Chapel Road intersection. However, significant geometric improvements will be necessary to accommodate turning movements and the widening of Wythe Creek Road.
- The Hudgins Road/Wythe Creek Road intersection does not currently warrant a signal, but may in the near future considering the increasing volumes along Wythe Creek Road and the programmed widening of Wythe Creek Road to five lanes through this intersection.
- According to the arterial link level of service analysis, the future programmed and planned improvements are accurately targeted at the heaviest congested arterials with the poorest levels of service (LOS) within the City.
- The guidelines listed in AASHTO and the enhancements needed for the planned bikeway network should improve some of the levels of service and make the roadways safer for vehicles, as well as for pedestrians and bicyclists.
- Consideration should be taken to continue the widening of Wythe Creek Road and Yorktown Road to five lanes through the Poquoson Avenue intersection to the Yorktown Road/Hunt's Neck Road intersection. The year 2015 traffic volumes for these segments are projected to be approximately 14,300 and 13,200 vehicles per day, respectively. As currently programmed, widening from two to three lanes, a LOS of E results by the year 2015, while at five lanes, these segments would operate at LOS of B.
- Also, the widening of Little Florida Road right-of-way to provide for two standard lanes and to provide for a turn lane at each of the intersections needs to be continued through the Poquoson Avenue intersection to approximately Bunting Lane. The widening of Little Florida Road to four lanes will be difficult considering the limited right-of-way and the close proximity of housing along the facility. However, four lanes would be the optimum solution along this route, because as a three-lane road Little Florida Road would operate at LOS of E/F during peak hours from Wythe Creek Road to Poquoson Avenue.
- The widening of Wythe Creek Road from Alphas Road to the Hampton City line will greatly improve traffic flow on that facility, but the transition back to two lanes at the Cary's Chapel Road intersection may result in a bottleneck. Provisions need to be taken to ensure a long enough transition to make the reduction in lanes smooth. This step must be coordinated with



the City of Hampton and the Virginia Department of Transportation.

- Any new signals that are installed within the City should be placed in locations that will allow possible integration into coordinated signal systems. For signal coordination to be particularly effective, it is essential to have left-turn bays, especially at signalized intersections.
- Poquoson should work to provide alternative modes of transportation other than single occupant vehicles. Bicycles are one such alternative mode of transportation, and the use of bicycles in Poquoson could be an important component of the overall transportation system. Bicycle usage for commuting and/or recreational purposes has many potential benefits. Providing safe and convenient bicycle facilities generally encourages bicycle usage and could help reduce the number of vehicle trips made in the study area.
- A combination of funding sources should be examined in order to provide and improve shoulders along the selected arterials and collectors. Those funding sources include, but are not limited to, Congestion Mitigation and Air Quality (CMAQ), Enhancement, Urban, local, and the privately supported development projects.
- It is also important that a formal bikeway/sidewalk plan be developed to provide detailed information on facility development and location, cost estimates, and alternative funding methods. Bikeways and sidewalks should be included in future roadway improvement projects through the Long-Range Plan and the Transportation Improvement Program process. As road widening take place, the necessary right-of-way for bikeways should be acquired and segments constructed as possible.

Transportation Demand Management (TDM) measures should also be considered and implemented in the study area in order to reduce traffic volumes, particularly during the peak hours. Although TDM strategies are usually effective, relatively inexpensive, and help achieve more efficient use of scarce transportation resources, such measures alone would not reduce traffic flow and accident problems along the study corridors.

#### Regional Transportation Planning Efforts

Many, if not all, travel patterns cross the sometimes artificial boundaries of the communities within Hampton Roads. Therefore, it is essential that the transportation network in Poquoson be effectively and efficiently linked with that of surrounding jurisdictions. Because of this linkage, effective solutions to today's transportation problems and the development of appropriate transportation plans for the future require a regional approach. In this regard, continuation of the regional network and modeling efforts of the Planning District Commission is crucial, not only to the region as a whole, but to each of its member communities.



### Linkages

It's important for Poquoson to take pro-active steps to improve its transportation through linkages. "Linkages", in this sense, are simply methods to connect transportation routes. Several linkage strategies that should be implemented in Poquoson include:

- Plan sidewalk, bikeway and trail corridors such that they intersect to create transportation nodes.
- Work to provide linkages between subdivisions via bikeways, trails and sidewalks.
- Ensure that subdivisions are not further isolated by requiring, where possible, existing roadways to serve new subdivisions. These linkages improve traffic flow and pedestrian opportunities, but more importantly, provide secondary routes for emergency response vehicles.

### Traffic Impact Analyses

Each new home, business and industry generates traffic and places travel demands on the roadway network. The following is a general guide to the trip generation by land use type and development type as determined by the *Institute of Transportation Engineers*.



<u><b>Land Use</b></u>	<u><b>Development</b></u>	<u><b>Trip Generation</b></u>
<b>RESIDENTIAL</b>	Single-Family Home	10 Trips/Dwelling Unit
	Townhome & Condominiums	6.9 Trips/Dwelling Unit
	Retirement Community	3.3 Trips/Dwelling Unit
<b>COMMERCIAL</b>	Neighborhood Shopping Center	94 Trips/1000 S.F. GFA
	Community Shopping Center	31 Trips/1000 S.F. GFA
	Retail Store	48 Trips/1000 S.F. GFA
	Motel	10 Trips/Guest Room
	Restaurant - Sit Down	95 Trips/1000 S.F. GFA
	Restaurant - Fast Food	632 Trips/1000 S.F. GFA
	Convenience Store	887 Trips/1000 S.F. GFA
	Service Station	133 Trips/fuel pump
	Car Wash	108 Trips/wash staff
<b>OFFICE</b>	Office Building	15 Trips/1000 S.F. GFA
	Medical Office	41 Trips/Doctor
	Bank	291 Trips/1000 S.F. GFA
<b>INDUSTRIAL</b>	Industrial Park	7.1 Trips/1000 S.F. GFA
	Warehouse	4.9 Trips/1000 S.F. GFA
	Research & Development	3.9 Trips/1000 S.F. GFA
<b>RECREATIONAL</b>	Golf Course	816 Trips/18 holes
	Bowling Alley	33 Trips/Lane
	Marina	4.8 Trips/Berth
	Tennis Center	27 Trips/Court
	Handball/Racquetball	105 Trips/Court

As shown above, certain uses have a far greater potential to generate traffic than others and virtually any use, if large enough, can generate significant traffic. For this reason, traffic analysis requirements were included in the Big Woods Zoning Districts and should be included for development in the entire commercial zoning districts.

#### Roadways and Economic Development

Much of Poquoson's economic development focus is in the Big Woods. Unfortunately the infrastructure to support commercial growth is not in place. The completion of the new Library/Municipal Complex in 1997, and the infrastructure extension needed to serve the site have opened up a number of properties in the Village Commercial Zoning District for economic development. The 1995 Big Woods rezoning created a number of transportation related criteria that new Big Woods developments must adhere to. Several of these strategies include:



- Seek to place widening of Victory Boulevard in VDOT's 6-year funding allocation.
- Work with York County to encourage the widening of State Route 171 from Poquoson/York County corporate limits to Route 17.
- Limiting curb cuts on Victory Boulevard to the extent possible.
- Transportation Impact Studies for significant traffic generators.
- Village Commercial Street Standards to include landscaping, large sidewalks, a uniform streetscape, on-street parking, attractive pavement materials, and seating areas along City Hall Avenue and Alphas Street Extended.
- Shared parking areas.
- Landscape buffer areas along Victory Boulevard.

These concepts were incorporated into the Zoning Ordinance, not only for transportation efficiency needs, but also to ensure that the roadways are developed in an aesthetically pleasing and pedestrian friendly environment.

If economic development is to continue in the Big Woods, additional roadways must be constructed (See attached map). These roadways should extend from the existing street network - Wythe Creek Road, Yorktown Road, Victory Boulevard, Alphas Street and City Hall Avenue. It will be important to develop access to each of the three Big Woods Zoning Districts. City owned property in each of the districts would help create the first segments of these roadways. Poquoson must pro-actively pursue the acquisition of right-of-way and the construction of these roadways through a variety of methods including: land donations or exchanges, proffers, conditions, capital improvements planning, site plans, urban construction funds and through a City economic development fund to be established.

### Summary

Poquoson's roadways will remain the principal transportation conduits for the foreseeable future. Unfortunately, there will not likely be financial funds to provide capacity increases at the same rate as growth occurs. Consequently, extra care and attention are required to preserve the existing capacity levels of the City's roadway network by avoiding actions, which degrade that capacity wherever possible. At the same time maintaining and enhancing roadway safety is an equally critical element. Balancing these needs will become increasingly difficult as non-local resources for road building diminish.



Transportation Goals, Objectives and Strategies

**Goals**

1. Develop a transportation system capable of moving people and goods safely and comfortably.
2. Plan and develop a balanced transportation system to reduce congestion and support the City's future growth and development.
3. Develop a bicycle trail system in Poquoson, which connects recreational, commercial, educational and residential areas.
4. Promote the development of Transportation Demand Management (TDM) techniques in order to reduce traffic volumes, particularly during the peak hours.
5. Obtain alternative funding sources for transportation projects and improvements.

**Objectives**

1. Develop 5 and 20-year transportation improvement plans consistent with regional transportation planning initiatives.
2. To provide a road network that will facilitate the safe and efficient movement of traffic among commercial, educational, residential and recreational facilities.
3. To reduce pedestrian and vehicular conflicts.
4. To lessen the amount of traffic congestion on Poquoson streets.
5. Develop a bikeway network facilitating safe bicycle transportation within the City of Poquoson and between neighboring localities.
6. Integrate bikeway development into the 5-Year Transportation Improvement Plan when funding is available.
7. Encourage the provision of bikeways and bicycle facilities, including bike racks, in multi-family residential developments and commercial shopping centers.
8. Support the modernization, growth, and development of the Newport News-Williamsburg Airport.
9. Promote the development of public transportation services and facilities.
10. Encourage economical transportation services for senior citizens, physically challenged residents, and other special populations.



11. Limit the numbers and types of direct driveway access to the roadway network.
12. Encourage residential development patterns which provide direct driveway access from individual units to local streets and not to collector and arterial roadways.
13. Promote the interconnection of subdivision street systems to allow local movement without the necessity of utilizing collector and arterial roads and to aid in the provision of services to the lots within the subdivisions.
14. Promote the beautification of roadways in the City, especially along entrance corridors and major collectors.
15. Coordinate and cooperate with neighboring jurisdictions in planning and developing roadway systems.
16. Implement the recommendations identified in the *Poquoson Level of Service and Transportation Improvement Study* prepared by the Hampton Roads Planning District Commission in March 1996.
17. Encourage pedestrian linkages between residential areas (primarily those areas with concentrations of either children or senior citizens) and schools, shopping areas, and recreational, cultural, and/or government facilities.
18. Provide aesthetically appealing sidewalks throughout commercial areas, especially the Village Commercial District.
19. Complete existing pedestrian systems in cooperation with adjoining jurisdictions.
20. Obtain state and federal grants for alternative funding sources for transportation projects and improvements.

### **Strategies**

1. Apply Virginia Department of Transportation state design standards for traffic volume and speed, and apply these standards to roadway improvement projects.
2. Reserve land for streets that are needed for through traffic.
3. Promote the construction of bikeways and sidewalks throughout the city, especially along the city's collector streets.
4. Complete Phases II and III of the Wythe Creek Road improvements which include improvements to sections of Yorktown and Hunts Neck Roads up to Browns Neck Road.





5. Add Victory Boulevard and Little Florida Road to the 5-Year Transportation Improvement Plan.
6. Encourage developers to include a bike path system within new developments and to connect, where possible, to existing trails and sidewalks.
7. Develop neighborhood and community wide bicycle networks to safely connect residential areas with nearby commercial and public-use areas.
8. Require routine consideration of bikeway construction as part of road construction or reconstruction/widening projects.
9. Consider implementation of the following Transportation Demand Management techniques: Regional Rideshare Program, Guaranteed Ride Program, Commuter Check Program, Park-and-Ride Lot Program and Van Leasing Program.
10. Support regional efforts to establish a light rail line connecting the Peninsula to Southside Hampton Roads and Richmond.
11. Update the City's development regulations and ordinances, where needed, to include requirements that all streets and thoroughfares meet or exceed VDOT standards.
12. Require that traffic issues and concerns be fully addressed as a part of all new development. In this regard, some form of traffic study should be performed for all development proposals. The level of detail and analysis required should be in direct proportion to the anticipated volume of traffic generated by the development.
13. Ensure that the development regulations and ordinances require the installation of pedestrian linkages between residential areas (primarily those areas with concentrations of children and/or senior citizens) and schools, shopping areas, and recreational, cultural and/or government facilities.
14. Develop and adopt a Bikeway/Sidewalk Plan. Such a plan should include specific locations and designs both for retrofitting already developed areas as well as for new development.
15. Continue to actively support and participate with the Hampton Roads Continuing Coordinated Technical Committee and the Metropolitan Planning Organization for regional transportation planning and programming.
16. Construct the following roadway improvement projects consistent with the *Hampton Roads Virginia Transportation Improvement Program* for FY 96-99:



*City of Poquoson Comprehensive Plan*  
**Transportation Element**

17. Major intersection improvements at several locations along Wythe Creek Road, Little Florida Road, and Poquoson Avenue.
18. Continue the widening of Wythe Creek Road.
19. Widen Victory Boulevard as development continues.
20. Improve Little Florida Road, Poquoson Avenue, Yorktown Road, and Cary's Chapel Road.
21. Improve turn lanes and shoulder widening, the two-lane facility, Yorktown Road, from Wythe Creek Road to York County line.
22. Improve intersections along Little Florida Road, by trimming trees and shrubs to improve the sight distance, by re-aligning Little Florida Road along certain sections.
23. Construct a traffic signal at the Wythe Creek Road/Cary's Chapel Road intersection, but only as significant geometric improvements are completed to provide the necessary turning movements and the widening of Wythe Creek Road.
24. Monitor the Hudgins Road/Wythe Creek Road intersection for the need for a future signal.
25. Pave shoulders along major collected streets to improve the levels of service and to make the roadways safer for vehicles, as well as for pedestrians and bicyclists.
26. Consideration should be taken to continue the widening of Wythe Creek Road and Yorktown Road to five lanes through the Poquoson Avenue intersection to the Yorktown Road/Hunt's Neck Road intersection. The year 2015 traffic volumes for these segments are projected to be approximately 14,300 and 13,200 vehicles per day, respectively. As currently programmed, widening from two to three lanes, a LOS E results by the year 2015, while at five lanes, these segments would operate at LOS B.
27. Take steps to widen Little Florida Road to two lanes and the necessary right and left turn lanes needs to be continued through the Poquoson Avenue intersection to approximately Bunting Lane.
28. Any new signals that are installed within the City should be placed in locations that will allow possible integration into coordinated signal systems. For signal coordination to be particularly effective, it is essential to have left-turn bays, especially at signalized intersections.
29. Provide alternative modes of transportation other than single occupant vehicles.



*City of Poquoson Comprehensive Plan*  
**Transportation Element**

30. Provide and improve shoulders along the selected arterials and collectors via funding through Congestion Mitigation and Air Quality (CMAQ), Enhancement, Urban, local, and the privately supported development projects.

